

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001780**Date Inspected:** 21-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Chen Xi and Chen Chih-Ming**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG side and deck panels**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present During the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

OBG bay 1

QA observed ZPMC qualified welding personnel perform the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) PMT for deck panels DP-002-001 and DP-137-001 on gantry #2. ZPMC welding personnel commenced welding PMT #1 for gantry 2 at 0930 hrs for deck panels DP-002-001 and DP-137-001. ZPMC Quality Control (QC) inspectors rejected the GMAW portion of the PMT because the amperage was too low on weld heads 1 & 4 at 335 amps. ZPMC elected to perform another PMT. After completion of PMT #2 ZPMC QC rejected it for an oversize weld. ZPMC then elected to run the SAW portion on PMT #1 because the amp readings of 335 was only 3 amps less than what was specified on the WPS. The WPS amp range is 338 to 391. After completion of the SAW portion of PMT #1 ZPMC QC inspectors rejected the PMT due to excessive overlap. It was then discovered that the oversize weld on PMT #2 was only 1mm over the specified 5mm fillet size which is acceptable. The tolerance for oversize fillet welds is +2mm. ZPMC elected to use PMT #2. The welding parameters and welder ID's for PMT #2 are as follows:

GMAW

Volts: 29.6 – 30.4 Amps: 335 – 370 Travel speed: 530mm/pm

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SAW

Volts: 24.9 – 25.4 Amps: 677 – 685 Travel speed: 505mmpm

Welder ID#'s

Weld joint 1: 059443

Weld joint 2: 062265

Weld joint 3: 059464

Weld joint 4: 059371

Weld joint 5: 059355

Weld joint 6: 059416

After the completion of the PMT QA observed ZPMC qualified welding personnel perform the GMAW welds joining the closed U-Ribs to deck panel DP-137-001. NOTE: QA observed ZPMC welding personnel started welding deck panel DP-137-001 before Caltrans QA Ultrasonic Testing (UT) technician was finished with UT depth of penetration testing. QA observed four ZPMC QC inspectors in the vicinity of the welding operations including ZPMC CWI identified as Sun Wei. There were also nine American Bridge/Fluor (ABF) inspectors in the area as well.

QA and QC monitored the welding process continuously throughout the day. The welding parameters as measured with the calibrated gages on the machines appeared to be in conformance with the posted WPS's.

DP-137-001 GMAW

Volts: 30 – 30.6 Amps: 350 – 370 Travel Speed: 525 mmpm

ZPMC did not start SAW process before QA shift end. Refer to production deck panel weld log dated 03/21/08 for DP 137-001 for more details.

QA departed this area before welding was completed for deck panel DP- 002-001.

OBG new assembly bay

QA observed ZPMC qualified welding personnel perform Submerged Arc Welding (SAW) on the second side of the Complete Joint Penetration (CJP) panel splice joint for panel #seg-013A-017. QA observed two ZPMC Quality Control (QC) personnel including CWI identified as Chen Chih-Ming in the vicinity of the welding along with four American Bridge/Fluor (ABF) Quality Control representatives. QA observed ZPMC QC verify preheat and welding parameters. The preheat and welding parameters appeared to be in compliance with the posted WPS's and are as follows:

Volts: 30 Amps: 505 Travel speed: 450mmpm

QA departed this area before welding was completed.

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Summary of Conversations:

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Hall,Steven	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
